



# DOE Challenge Home

## Better Business for Builders

**SAM RASHKIN**

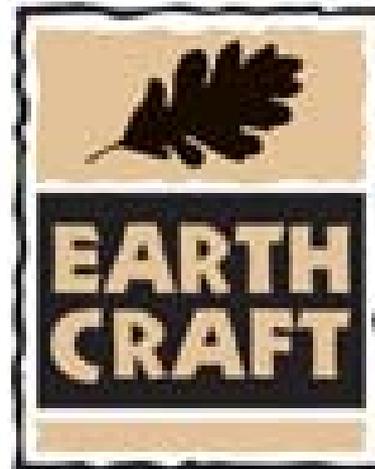
Chief Architect

Building Technologies Program

# You Have Lots of Choices...

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy



## By constructing DOE Challenge Homes, you are:

- **in a select group of builders**

Only the **top one percent of builders** in the country meets the extraordinary energy efficiency, comfort, health, safety, durability and quality levels associated with the DOE Challenge Home.

- **providing unprecedented value**

Your customers receive immediate energy savings of 40-50% easy to adapt to **zero net-energy performance** with a small renewable energy system.

- **differentiated from the competition**

About 12 in 13 homes sales nationwide are 'used' homes. In addition, the majority of new homes are constructed to minimum code. Based on a foundation of comprehensive home performance, including ENERGY STAR Qualified Home v.3 and the **latest proven innovations** from DOE Building America, the program provides a path to constructing net-zero energy ready that none of your competition has.

As a condition of partnership, all partners are required to complete an annual online training prior to being listed as a partner

This orientation training should take 1.5 hours to complete. After this training, you should understand:

- **Communicating the value proposition** to homebuyers
- **Your roles and responsibilities and the benefits** of being a DOE Challenge Home partner
- **The process for qualifying homes**
- **The technical specifications** included in the DOE Challenge Home National Program Requirements

**Section 1:** The Value Proposition

**Section 2:** Roles, Responsibilities and Process

**Section 3:** National Program Requirements

There will be a short set of questions at the end of the webinar to ensure that you understand the content.



## The DOE Challenge Home Business Case

## Minimize Cost

NAHB estimates for every **\$1,000 increase** in sales price, nearly **250,000 households** fail to qualify for a mortgage on a typical new home.

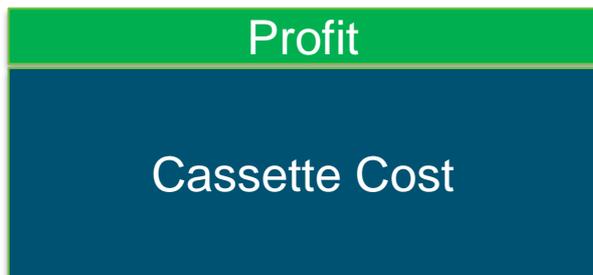
[[http://www.nahb.org/fileUpload\\_details.aspx?contentTypeID=3&contentID=40372&subContentID=112293](http://www.nahb.org/fileUpload_details.aspx?contentTypeID=3&contentID=40372&subContentID=112293)]

## Maximize Value

so homebuyers are compelled  
to want new housing again.

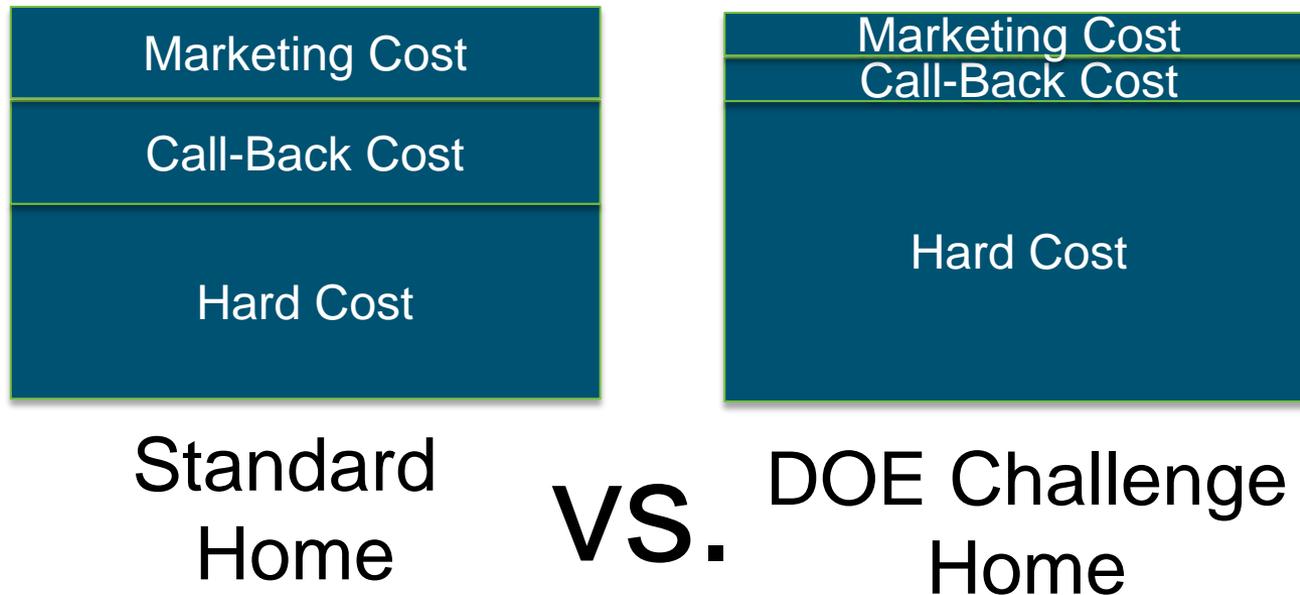
# Innovation/Value Premium

Price Based on  
'Value', NOT Cost

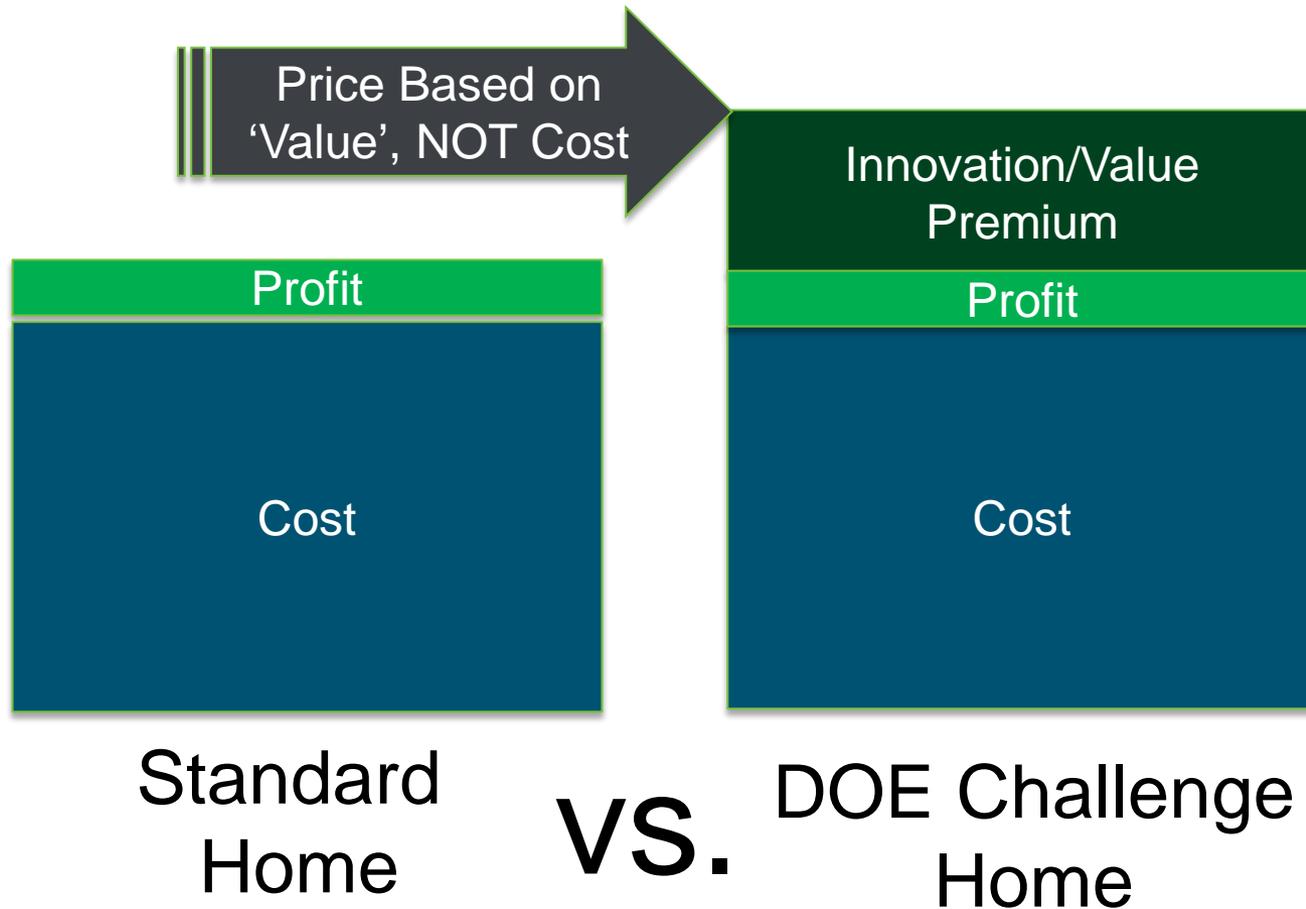


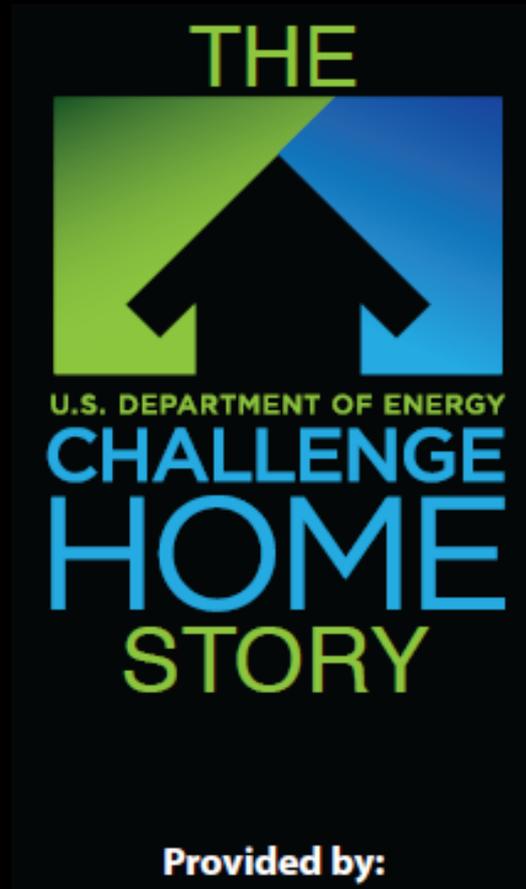
VS.

DOE Challenge Homes have higher hard costs, but marketing cost savings and lower call-back rates help to equalize cost



# Home Innovation/Value Premium





**ACME Homes<sup>TM</sup>**

**ACME Homes**

U.S. Department of Energy



# Exclusive

Think of the extra confidence going to a doctor ranked in the top of his or her field.

Similarly, only the top builders in the country meet extraordinary levels of excellence specified by Challenge Home guidelines.

**Feel great knowing you choose a home offered only by a select group of leading edge builders.**

ACME Homes



U.S. Department of Energy

# Tech-Savvy

Every DOE Challenge Home starts with a solid foundation of building science specified by ENERGY STAR for Homes.

Then each labeled home includes advanced technologies and practices from DOE's world-class research program, Building America.

**Look for the most effective and proven innovations.**

ACME Homes

U.S. Department of Energy



# Visionary

Every DOE Challenge Home embraces a unique opportunity during design and construction to meet and exceed forthcoming codes.

Additional details can save \$1,000s installing a solar system down the road.

**It's great peace-of-mind knowing your largest investment of a lifetime meets future expectations.**

ACME Homes

U.S. Department of Energy



# Ultra-Efficient

Every DOE Challenge Home is so energy efficient, a small solar system can often offset most, or all, of your utility bills.

We call this **Zero Net-Energy Ready**.

**Enjoy never having to worry  
about rapidly increasing utility costs.**

ACME Homes

U.S. Department of Energy



# Comfort Plus

Extraordinary attention to detail controlling air, heat, and moisture flow in every DOE Challenge Home surrounds you with even temperatures, low humidity, and quiet in every room and every floor.

**It's time to expect outstanding performance.**

**ACME Homes**

U.S. Department of Energy



# Healthful

The same way we want nutritious food on our plates,  
we want a healthy indoor environment.

Every DOE Challenge Home has a comprehensive package of  
measures that control dangerous pollutants, provide continuous fresh  
air, and effectively filter the air you breathe.

**Experience a healthier home for your family.**

**ACME Homes**

U.S. Department of Energy



# Quality-Built

Advanced construction practices and technologies are specified for every DOE Challenge Home, but that is not enough.

Their inclusion and proper installation are enforced by independent verifiers who rigorously implement detailed checklists, inspections, and advanced diagnostics.

**It's time to hold your home to a higher standard.**

**ACME Homes**

U.S. Department of Energy



# Enduring

The advanced levels of affordability, comfort, quiet, health, durability, quality, and future performance delivered in every DOE Challenge Home are too compelling to ignore.

That's why DOE believes this is where all housing is headed.

**Now you can feel truly confident  
making one of life's largest purchase decisions.**



# ACME Homes<sup>TM</sup>

123 Main St., Any Town, US 12345

123-456-7890

[acme@acmehomes.com](mailto:acme@acmehomes.com)

[www.acmehomes.com](http://www.acmehomes.com)

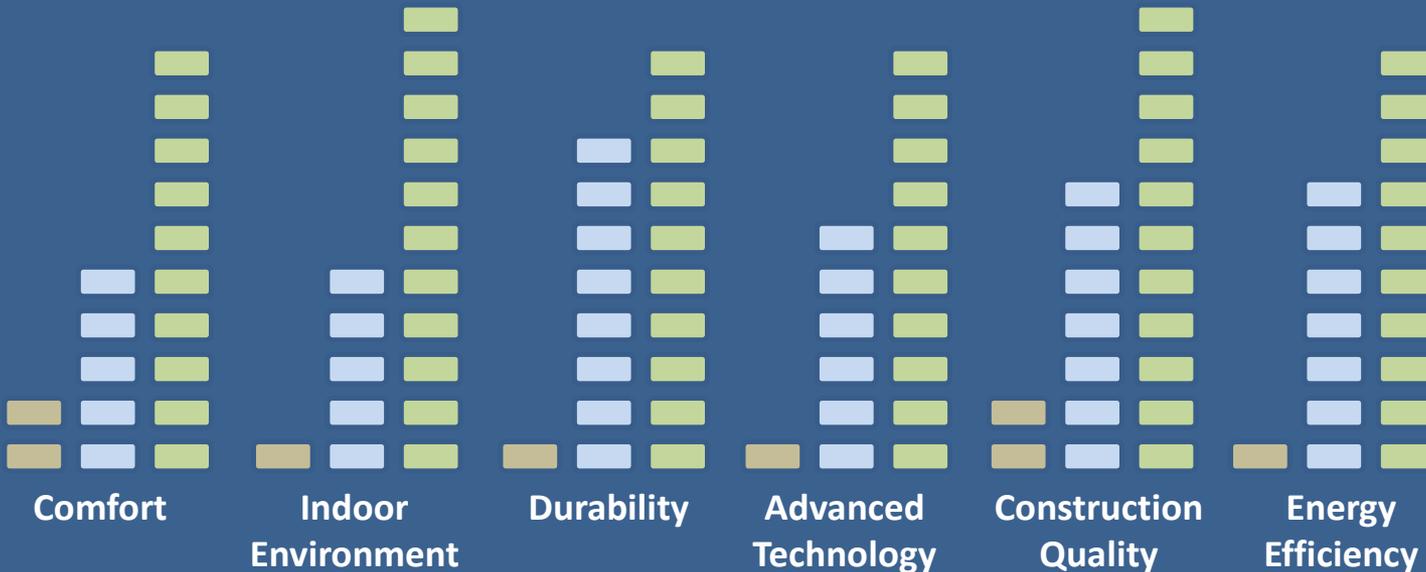


**Look for the label that delivers  
the future of housing today.**

To learn more,  
visit the Challenge Home website at  
[www.buildings.energy.gov/challenge](http://www.buildings.energy.gov/challenge)

## DOE Challenge Home: A New Level of Performance

**Draft**



**KEY**

- DOE Challenge Home
- ENERGY STAR Home
- Existing Home

This label indicates relative performance of DOE Challenge Homes to ENERGY STAR certified homes and typical existing homes.  
Actual performance may vary.



## Roles, Responsibilities and Process

All DOE Challenge Home partners must sign a Partnership Agreement and abide by its terms, including:

- **Providing a DOE Challenge Home Certificate** to each home owner.
- **Adhering to DOE Challenge Home Identity Guidelines** for proper use of the name and logo.
- **Building / verifying at least one qualified home per year** to maintain active partnership.
- **Taking orientation training** after registering and renewing training every year.
- **Acknowledging responsibilities** that inactive partners may not use the DOE Challenge Home logo and must promptly remove it from all marketing and point-of-sale materials.

To view the full terms and disclaimers of your DOE Challenge Home Partnership Agreement, visit:

<http://www1.eere.energy.gov/buildings/challenge/>

- **Ensure up-to-date information**

Partners must ensure that DOE Challenge Home has up-to-date company and contact information. This allows DOE to provide you program updates, policy change notices, and other important information.

- **Using your account**

At [http://www4.eere.energy.gov/buildings/challenge/my\\_account](http://www4.eere.energy.gov/buildings/challenge/my_account) you can:

- Update company information;
- Add, delete, and edit contacts;
- Add/Update your logo;
- Add commitments; and
- Access key tools and resources (in the future)

- **Username and password required**

Your username is the email with which you registered. Your password is sent after you confirm your account. If you have forgotten your log-in information, click “I forgot my password” and a new one will be sent to your e-mail address.

- Review
  - technical guidelines
  - terms of the partnership agreement
- Register and electronically sign agreement
- Choose optional commitments



## Select Your Commitments

-  **100% Commitment.** We are committed to constructing 100% of our homes to the U.S. DOE's Challenge Home Requirements.
-  **WaterSense.** We are committed to meeting the EPA's WaterSense (WS) guidelines to reduce water consumption inside and outside constructed homes.
-  **Fortified for Safer Living** We are committed to meeting the Fortified for Safer Living guidelines to ensure greater disaster resistance.
-  **Quality Management Program.** We are committed to meeting the Challenge Home Quality Management Program to help ensure business operations success.
-  **Indoor airPlus.** We are committed to meeting EPA's Indoor airPlus to ensure comprehensive indoor air quality.

# Process Overview

**Registration and training** – builders and raters register as partners and take orientation training to learn requirements.

**Plan Evaluation** – rater evaluates plans and pinpoints improvements to meet the DOE Challenge Home requirements.

**Construction** – builder constructs home to meet all DOE Challenge Home National Program Requirements

**Field Verification** – rater conducts independent inspections and testing required to earn the label.

**Certification** – rater submits verification information to HERS Provider; rater/provider submits rating to National Building Registry; and rater prints certificate and label for Builder

A critical element of partnering with DOE Challenge Home as a builder is working with a Home Energy Rating System (HERS) Rater.

## Long Term Process

- Partner registers
- Takes online webinar
- Is listed as a partner on website after webinar

## Current Temporary Process

- Partner registers
- Is listed temporarily as partner on website
- Takes live webinar

Note: Builder and Rater should thoroughly review DOE Challenge Home National Program Requirements before beginning the construction process

1. Rater follows standard plan review and HERS rating process; adds additional checklists and requirements
2. ENERGY STAR and DOE Challenge Home rating can happen concurrently
3. Rater confirms mandatory DOE Challenge Home requirements and Target Home HERS Index; then enters Builder Partner ID (found on builder profile) into HERS rating software (capability being developed)
4. Rater submits home record per RESNET process
5. All DOE Challenge Home Certifications must be submitted to the RESNET National Building Registry

## Long Term Process

- Rater prints certification from rating software
- Certificate includes
  - Rating details
  - Graphic HERS Index
  - List of optional programs

## Current Temporary Process

- Rater completes rating
- Rater submits data spreadsheet to DOE Challenge Home
- DOE Challenge Home creates customized certificate
- Certificate emailed to builder

## Long Term Process

- DOE supplies raters with DOE Challenge Home labels
- Rater gives label to builder

## Current Temporary Process

- No label apart from certificate
- Label design in development

Builder profile populated with number of homes certified



Builder can opt to provide case study information focused on marketing, business case, and technological innovation



Home buyer can opt to provide utility bill data to DOE Challenge Home (process in development)

- **Partner Privileges**

As a DOE Challenge Home partner, you will have access to a variety of resources at no cost. This includes customized brochures and case studies, logos, home certificates and labels, and more.

- **How to Access Resources**

All resources will be available by logging in to the DOE Challenge Home website and through electronic newsletters.

- **Technical Support**

Not only is the latest research incorporated into the DOE Challenge Home requirements, but the *[DOE Building America Solutions Center](#)* has technical information at your fingertips. New issues can be taken to DOE Building America stakeholder meetings and be incorporated into new research studies.

- **Recognition**

DOE is developing an awards program.

- **Attract Buyers**  
DOE maintains a Partner Locator tool that homebuyers can use to find DOE Challenge Home builders in their area.

- **Builder Listings**  
All active partners are listed on the Partner Locator. Builder partners can differentiate their company listing on the Partner Locator through the optional commitments

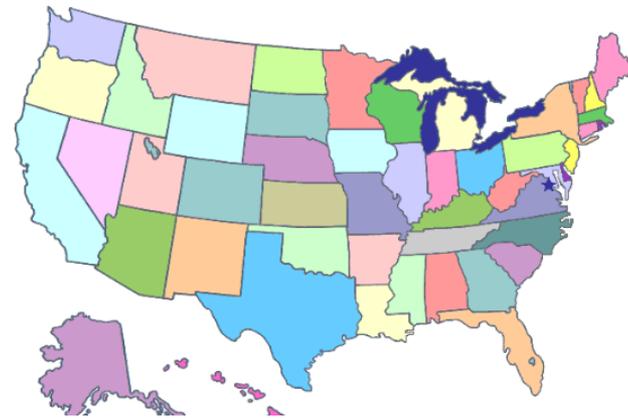


## DOE Challenge Home Partner Locator

Find out who is taking the challenge. Locate [DOE Challenge Home](#) partners near you! First choose a partner type and select a state. You can also enter a company name and find DOE Challenge Home partners that match your search.

*Please note: Partners began registering for the new DOE CHALLENGE HOME on April 2, 2012. The locator will not produce large results of partners in the program for several weeks. Please check back to watch our progress.*

Organization Type:  Choose a State:  [See Results](#)



- **Number of Homes that Meet the Challenge**

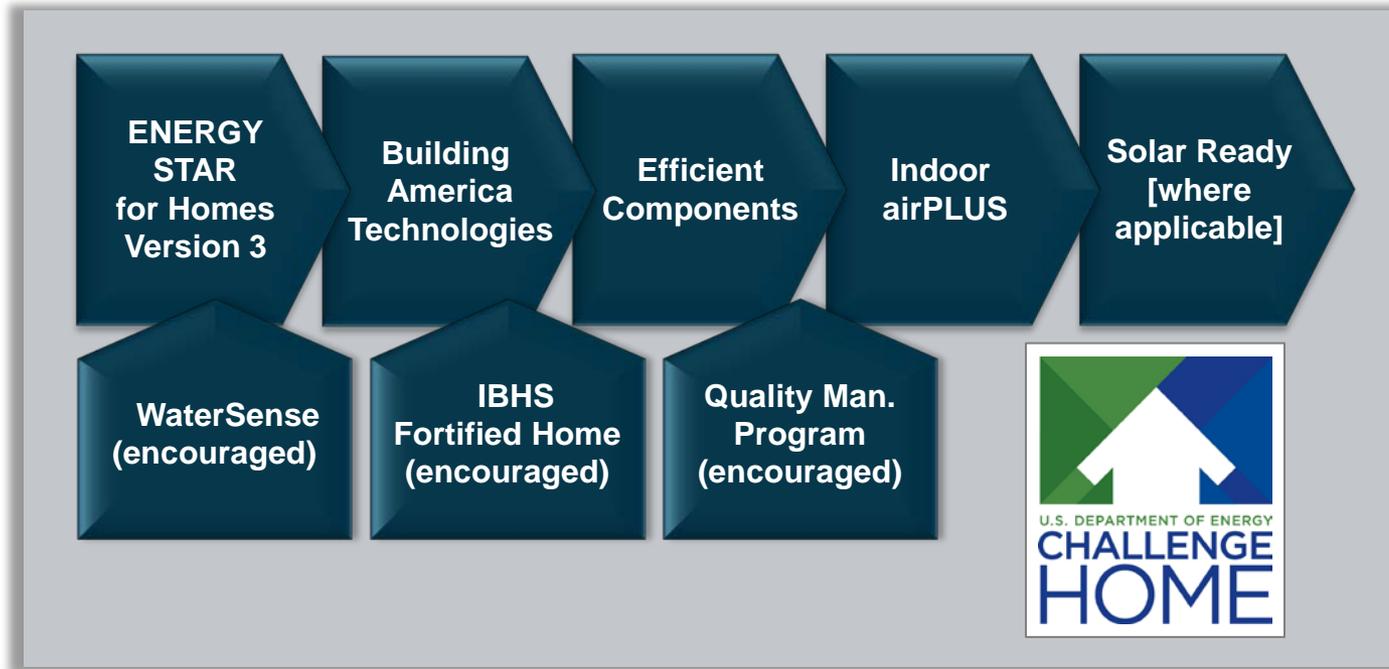
The number of homes displayed on the Partner Locator come from the RESNET National Registry.

- **Website link**

A link to your website.

# National Program Requirements

# Specifications flow from the program strategy....



# DOE Challenge Home - Framework



## DOE Challenge Home National Program Requirements (Rev. 02) July 1, 2012

Exhibit 1: DOE Challenge Home Mandatory Requirements for All Labeled Homes

Area of Improvement	Mandatory Requirements
1. ENERGY STAR for Homes Baseline	<input type="checkbox"/> Certified under ENERGY STAR Qualified Homes Version 3 <sup>5</sup>
2. Envelope <sup>6</sup>	<input type="checkbox"/> Fenestration shall meet or exceed latest ENERGY STAR requirements <sup>7, 8</sup> <input type="checkbox"/> Ceiling, wall, floor, and slab insulation shall meet or exceed 2012 IECC levels <sup>9</sup>
3. Duct System	<input type="checkbox"/> Ducts located within the home's thermal and air barrier boundary <sup>10</sup>
4. Water Efficiency	<input type="checkbox"/> Hot water delivery systems shall meet efficient design requirements <sup>11</sup>
5. Lighting & Appliances <sup>12</sup>	<input type="checkbox"/> All installed refrigerators, dishwashers, and clothes washers are ENERGY STAR qualified. <input type="checkbox"/> 80% of lighting fixtures are ENERGY STAR qualified or ENERGY STAR lamps (bulbs) in minimum 80% of sockets <input type="checkbox"/> All installed bathroom ventilation and ceiling fans are ENERGY STAR qualified
6. Indoor Air Quality	<input type="checkbox"/> EPA Indoor airPLUS Verification Checklist and Construction Specifications <sup>13</sup>
7. Renewable Ready <sup>14</sup>	<input type="checkbox"/> EPA Renewable Energy Ready Home Solar Electric Checklist and Specifications <sup>15</sup> <input type="checkbox"/> EPA Renewable Energy Ready Home Solar Thermal Checklist and Specifications <sup>16</sup>

DOE  
Challenge Home  
Mandatory  
Reqmnts.

Must  
Comply

Exhibit 2: DOE Challenge Home Target Home<sup>3, 17</sup>

HVAC Equipment <sup>18</sup>			
	Hot Climates (2012 IECC Zones 1,2) <sup>19</sup>	Mixed Climates (2012 IECC Zones 3, 4 except Marine)	Cold Climates (2012 IECC Zones 4 Marine 5,6,7,8)
AFUE	80%	90%	94%
SEER	16	15	13
HSPF	8.2	9	10 <sup>20</sup>
Geothermal Heat Pump	ENERGY STAR EER and COP Criteria		
ASHRAE 62.2 Whole-House Mechanical Ventilation System	1.4 cfm/W; no heat exchange	1.4 cfm/W; no heat exchange	1.2 cfm/W; heat exchange with 60% SRE
Insulation and Infiltration			
<ul style="list-style-type: none"> <li>Insulation levels shall meet the 2012 IECC and achieve Grade 1 Installation, per RESNET standards.</li> <li>Infiltration<sup>21</sup> (ACH50): 3 in CZ's 1-2   2.5 in CZ's 3-4   2 in CZ's 5-7   1.5 in CZ 8</li> </ul>			
Windows <sup>22, 23, 24</sup>			
	Hot Climates (2012 IECC Zones 1,2,)	Mixed Climates (2012 IECC Zones 3, 4 except Marine)	Cold Climates (2012 IECC Zones 4 Marine 5,6,7,8)
SHGC	0.25	0.27	any
U-Value	0.4	0.3	0.27
Homes qualifying through the Prescriptive Path with a total window-to-floor area greater than 15% shall have adjusted U-values or SHGCs. <sup>25</sup>			
Water Heater			
ENERGY STAR minimum; for heating oil water heaters use EF = 0.60			

“Target  
Home”  
Design Specs

Flexibility  
through  
Trade-offs

Homes larger than the benchmark home size must use the size adjustment factor to determine the target HERS index

Size  
Adjustment  
Factor

Exhibit 3: Benchmark Home Size<sup>28</sup>

Bedrooms in Home to be Built	1	2	3	4	5	6	7	8
Conditioned Floor Area <small>Benchmark Home</small>	1,000	1,600	2,200	2,800	3,400	4,000	4,600	5,200

**Note:** Renewable energy systems may not be used to qualify for the Challenge Home HERS Index Target Score, but may be used for the incremental HERS Index points needed for the Size Adjustment Factor.

Size Modification Factor =  $\left[ \frac{CFA_{\text{Benchmark Home}}}{CFA_{\text{Home to Be Built}}} \right]^{0.25}$ ,  
but Not to Exceed 1.0

# DOE Challenge Home - Mandatory Reqmnts.

**Exhibit 1: DOE Challenge Home Mandatory Requirements for All Labeled Homes**

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## Encouraged:

- EPA WaterSense
- EPA Indoor airPLUS (full compliance)
- Quality Management
- Disaster Resistance (IBHS Fortified Home)

# DOE Challenge Home - Target Home Design

Exhibit 2: DOE Challenge Home Target Home <sup>3, 17</sup>

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SEER	18	15	13
HSPF	8.2	9	10 <sup>19</sup>
Geothermal Heat Pump	ENERGY STAR EER and COP Criteria		
ASHRAE 62.2 Whole-House MV System Performance	1.4 cfm/W; no heat exchange	1.4 cfm/W; no heat exchange	1.2 cfm/W; heat exchange with 60% SRE
Insulation and Infiltration			
Insulation levels shall meet the 2012 IECC and achieve Grade 1 Installation, per RESNET standards.			
Infiltration <sup>20</sup> (ACH50):	3 in CZ's 1-2	2.5 in CZ's 3-4	2 in CZ's 5-7   1.5 in CZ 8
Windows <sup>21, 22, 23</sup>			
	Hot Climates (2012 IECC Zones 1,2,)	Mixed Climates (2012 IECC Zones 3,4)	Cold Climates (2012 IECC Zones 5, 6,7,8)
SHGC	0.25	0.27	any
U-Value	0.4	0.3	0.27
Homes qualifying through the Prescriptive Path with a total window-to-floor area greater than 15% shall have adjusted U-values or SHGCs. <sup>24</sup>			
Water Heater			
ENERGY STAR minimum			
Thermostat <sup>25</sup> & Ductwork			
<ul style="list-style-type: none"> <li>Programmable thermostat (except for zones with radiant heat)</li> </ul>			
Lighting & Appliances			
<ul style="list-style-type: none"> <li>For purposes of calculating the DOE Challenge Home Target Home HERS Index, homes shall be modeled with an ENERGY STAR dishwasher, ENERGY STAR refrigerator, ENERGY STAR ceiling fans, and ENERGY STAR lamps (bulbs) in 80% of sockets or 80% of lighting fixtures are ENERGY STAR Qualified.</li> </ul>			

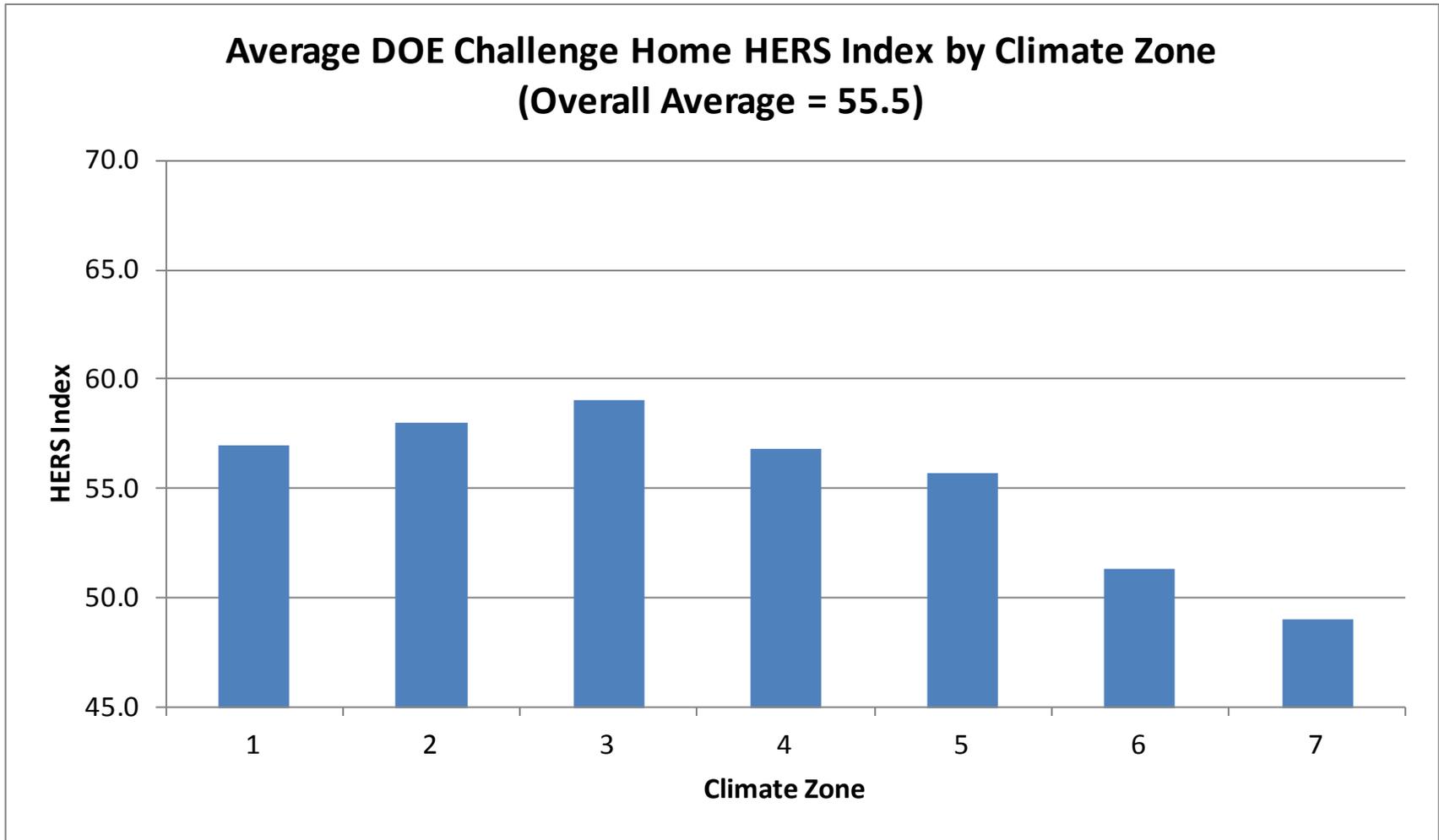
Higher Eff.  
HVAC  
Equip.

2012 vs.  
2009 IECC  
Insul.

More Eff.  
Windows

Half ACH50

ENERGY  
STAR Water  
Htg.



Based on 1800, 2400, and 3600 ft<sup>2</sup> prototypes on climate-appropriate foundations.

# Overview of Mandatory Requirements

## ENERGY STAR for Homes Baseline - Mandatory

- Alignment: ENERGY STAR V3 as prerequisite
- Systems-based; building-science based
- Required for all qualifying homes (prescriptive & performance)
- Variable versus fixed HERS Index
- Benchmark Home
- Sampling - same policy
- V3 Checklists
  - Thermal Enclosure
  - HVAC – Contractor
  - HVAC – Rater
  - Water Management **or** Indoor airPLUS



## 2012 IECC Envelope Insulation Levels & ENERGY STAR Qualified Windows - Mandatory

- 2012 IECC Envelope Insulation Levels
  - Assures the home's envelope will meet next generation code
  - Alternative equivalent U-factor or total UA calculation permitted
  - Allowances for ceilings without attic spaces
- ENERGY STAR Windows
  - Assures window performance beyond code and ENERGY STAR V3 levels
  - Fenestration used for passive solar design are exempt from the U-factor and SHGC requirements
  - Area-weighted averages for U, SHGC permitted

ENERGY STAR® Qualified in All 50 States



World's Best Window Co.  
Millennium 2000+  
Vinyl-Clad Wood Frame  
Double Glazing • Argon Fill • Low-E  
Product Type: Vertical Slider  
(per NFRC 100-97)

ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P)	Solar Heat Gain Coefficient
<b>0.30</b>	<b>0.27</b>
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance	Air Leakage (U.S./I-P)
<b>0.51</b>	<b>0.2</b>

Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. WPC ratings are determined for a fixed set of environmental conditions and a specific product size. Consult manufacturer's literature for other product performance information. www.nfrc.org

## Ducts located within the home's thermal and air barrier boundary - Mandatory

- “Must Have” for highest performing homes
- Alternatives & Allowances:
  - Up to 10' of total duct length is permitted to be outside of the home's thermal and air barrier boundary.
  - Ducts are located in an unvented attic
  - Insulated, SPF-encapsulated, and buried ducts in an attic
  - Attic jump ducts (sealed and buried)
  - Ducts are located within an unvented crawl space
  - Ducts are located in a basement which is within the home's thermal boundary
  - Ductless HVAC system is used



## Efficiency Hot Water Distribution Systems - Mandatory

- “Must Have” for highest performing homes
- Provision is drawn from EPA WaterSense Single-Family New Home Specifications.
  - hot water distribution system shall store no more than 0.5 gallons (1.9 liters) of water in any piping/manifold between the hot water source and any hot water fixture.
  - To account for the additional water that must be removed from the system before hot water can be delivered, no more than 0.6 gallons (2.3 liters) of water shall be collected from the hot water fixture before hot water is delivered.
  - Timer- and temperature-based recirculating systems shall not be used to meet the criteria.

## **ENERGY STAR Appliances & Lighting - Mandatory**

- Ensure good performance levels from these increasingly important energy end-uses in high performance homes
- ENERGY STAR Appliances: installed refrigerators, dishwashers, clothes washers, bathroom ventilation, and ceiling fans
- ENERGY STAR Lighting: 80% of fixtures or lamps (bulbs)

## IAQ – Comply with EPA Indoor airPLUS Verification Checklist and Construction Specs - Mandatory

- Homes this efficient, this well insulated and tight, must adopt a systems-based approach to IAQ
- Exceptions & Allowances:
  - ENERGY STAR for Homes V3 Water Management System Builder Checklist shall be equivalent to compliance Indoor airPLUS “Moisture Control” provisions (Provisions 1.1 through 1.13).
  - Builders shall not be required to provide home buyers with radon test kits (Provision 2.2 of Indoor airPLUS). However, builders are strongly encouraged to include a radon fact sheet in their homeowner materials.
  - For Provision 5.6 of Indoor airPLUS, garage exhaust fans operated by automatic fan controls that activate the fan whenever the garage is occupied and run for at least 10 minutes after the garage has been vacated are deemed acceptable.
  - Builders seeking the Indoor airPLUS label must achieve **full** compliance with the Indoor airPLUS Verification Checklist.

## EPA Renewable Energy Ready Home Checklists - Mandatory

- After taking all of the other steps to produce a high performance home –basic, minimal cost steps accommodate a future renewable energy system. E.g.:
  - Document max allowable roof dead/live load ratings
  - Provide conduit between attic and water heater area
  - Reserve & label space in electrical service panel for future PV breaker
- Allowances:
  - Application of RERH Checklists reserved for homes where renewables make the most sense
  - Recognition of high performance water heating systems



# Overview of Target Home

## DOE Challenge Home “Target Home”

- Analogous to ENERGY STAR V3’s “Reference Home”
- “Sets the energy efficiency bar” for qualifying homes
- Used for Performance Path qualifications
- You can “beat” the Target Home in any way – as long as Mandatory provisions are met
- Target Home specs generally represent:
  - Good/very good practice
  - Common materials & methods
  - Climate zone-specific specs

**Exhibit 2: DOE Challenge Home Target Home <sup>3, 17</sup>**

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<ul style="list-style-type: none"> <li>Programmable thermostat (except for zones with radiant heat)</li> </ul>			
Lighting & Appliances			
<ul style="list-style-type: none"> <li>For purposes of calculating the DOE Challenge Home Target Home HERS Index, homes shall be modeled with an ENERGY STAR dishwasher, ENERGY STAR refrigerator, ENERGY STAR ceiling fans, and ENERGY STAR lamps (bulbs) in 80% of sockets or 80% of lighting fixtures are ENERGY STAR Qualified.</li> </ul>			

# Performance Path Example

## 4 BR, 3500 SF, CZ2 Prototype

Specification	Target Home Spec	Design Home
Mandatory Items: ducts in conditioned space; 2012 IECC insulation; etc.		Meets all mandatory items; uses total UA to meet insulation reqmnt.
Windows	U=0.40; SHGC=0.25	U=0.32; SHGC=0.24
Infiltration	3 ACH50	2.5 ACH50
Duct Leakage	Total ≤ 8 CFM25 per 100 SF of CFA; Leakage to outdoors ≤ 4 CFM25 per 100 SF of CFA	Total leakage ≤ 280 CFM25 Leakage to outdoors ≤ 140 CFM25
Furnace AFUE	80	92
A/C SEER	18	16
Whole-House Mech. Vent.	75 cfm; 1.4 cfm/W;	75 cfm; 5.0 cfm/W
Water Heater	ENERGY STAR	Gas storage 0.67 EF
Target Home HERS Index	55; <b>(52 with SAF)</b>	
HERS Index – Design Home		52 – <b>COMPLIES!</b>

# Prescriptive & Performance Compliance

Homes can be qualified through the Prescriptive Path when:

- The home is the same size or smaller than the Benchmark Home Size;

Exhibit 3: Benchmark Home Size<sup>26</sup>

Bedrooms in Home to be Built	1	2	3	4	5	6	7	8
Conditioned Floor Area <small>Benchmark Home</small>	1,000	1,800	2,200	2,800	3,400	4,000	4,800	5,200

- The home has been designed and constructed to the DOE Challenge Home Target Home specs with no trade-offs; and
- The home meets all Mandatory requirements, passes all required tests , and meets the requirements of the Inspection Checklists.

- Home can be any size (larger than Benchmark)
- All Mandatory provisions must be met
- The Target Home specs are used to set the performance threshold that each home qualified under the Performance Path must meet. This threshold is called the DOE Challenge Home Target Home HERS Index.
  - Between now and fall 2012, the Rater will manually configure the Target Home HERS Index using rating software;
  - After this time, the rating software will automatically configure the Target Home and calculate the Target Home HERS Index (including Size Adjustment Factor when applicable)

# DOE Challenge Home - Compliance Options



1. Check eligibility.
2. Check Benchmark Home Size.
3. Select energy efficiency measures.

## Prescriptive Path

1. Build the home using the DOE Challenge Home Target Home Design specs (meet or exceed).
2. Complete all Mandatory provisions..

## Performance Path

1. Model the home and create the DOE Challenge Home “Target Home.” **Manual process until ~Fall 2012; after this time rating software will automatically configure Target Home.**
2. If the home is larger than the Benchmark Home Size, apply the Size Adjustment Factor to find the Target Home HERS Index.
3. Select efficiency measures that meet the mandatory requirements and score  $\leq$  Target Home HERS Index.
4. Complete the inspection checklists.

- You have now completed the DOE Challenge Home Orientation Training course.
- You will receive a certification of completion via e-mail.
- If you found this training to be helpful and would like your colleagues to participate, please have them contact [doechallengehome@newportpartnersllc.com](mailto:doechallengehome@newportpartnersllc.com)

# Thank You

Questions?



**For More Information:**

<http://www1.eere.energy.gov/buildings/challenge/>

**e-mail Contact:**

[doechallengehome@newportpartnersllc.com](mailto:doechallengehome@newportpartnersllc.com)